

REMARKS

Claims 1-11 are pending in this application. By this Amendment, claim 1 is amended and claims 9-11 are added. No new matter is added.

I. Allowable Subject Matter

The indication of allowable subject matter in claims 2, 4, 5, 7 and 8 is appreciated, they being allowable if rewritten in independent form to include all of the features of their base claim and any intervening claims. Claims 2, 4, 5, 7 and 8, as well as the remaining pending claims, are in condition for allowance for the reasons discussed below.

II. Claim Objections

Claim 1 is objected to due to an informality. As claim 1 is amended to correct the informality in response to the objection, withdrawal of the objection of claim 1 is respectfully requested.

III. Claim Rejections Under 35 U.S.C. §103

Claim 1 is rejected under 35 U.S.C. §103(a) as unpatentable over U.S. Patent 4,977,508 to Tanaka et al. (Tanaka) in view of U.S. Patent 4,435,987 to Sugimoto and U.S. Patent 3,887,855 to Klimo. The rejection is respectfully traversed.

None of the applied references, whether considered alone or in combination, disclose or suggest each and every feature recited in the rejected claim. For example, the combination of references fails to disclose or suggest a torque computation unit of a vehicle generator that includes a rotor, an armature winding, a field coil and a field current switching element, the torque computation unit comprising field current detecting means for detecting a field current value relating to current supplied to the field coil; output current detecting means for detecting an output current value relating to output current of the armature winding; rotation speed detecting means for detecting a rotation speed of the rotor; and torque calculation

means for calculating driving torque of the generator from the field current value, the output current value and the rotation speed.

Tanaka relates to an internal combustion engine equipped with a torque controller to control torque variations propagated to various devices driven by the engine (col. 1, lines 6-16). The torque controller is intended to eliminate or minimize a difference in load torque to be absorbed by auxiliary machinery in the entire range of crank angle, the load torque being controlled based on the differential torque information collected in at least one previous operating cycle of the engine (col. 1, lines 50-60). The load torque to be absorbed by the auxiliary machinery for nullifying the speed variation is calculated for each crank angle, and the load torque control is implemented on the basis of the calculated control value after one engine cycle (col. 2, lines 35-41).

It is alleged in the Office Action that Tanaka discloses a field current detecting means and "affecting" the torque of the system based on the field current. The Office Action cites in col. 3, line 53 - col. 4, line 8, in support of the allegation. However, the referenced section of Tanaka merely discloses that the torque variation of the engine is reflected by a crank shaft speed variation which is detected by the crank angle sensor 10 and that the frequency of the sensor output pulses is reduced to meet the minimum requirement for control by a frequency driver 11 being fed to a microcomputer 6. A load torque control unit 7 has a driver 16 which turns on or off a MOS switch 13 connected in parallel to the load 8 and battery 9. By operating the driver 16 and pulse width modulation mode or the like so as to change the duty cycle of the MOS switch 13, the load current of the generator can be controlled. Thus, Tanaka does not disclose or suggest a field current detecting means for detecting field current value relating to current supplied to the field coil and calculating a driving torque of a generator using that value. Although Tanaka may disclose a device for detecting field

current, Tanaka fails to disclose or suggest using such detecting field current for calculating a driving torque of a generator.

It is admitted in the Office Action that neither Tanaka or Sugimoto disclose calculating a torque value using the field current. In an effort to overcome the admitted deficiency, Klimo is combined with Tanaka and Sugimoto for allegedly disclosing the admittedly missing feature. However, Klimo does not relate to a calculating driving torque of a generator. Rather, Klimo relates to a DC reversible drive motor that is operated by a motor control system to control motor speed in dependence upon an error signal (Abstract of Klimo). The motor drive control system modifies or overrides a speed reference control signal during motor regenerative conditions to control motor speed within desired speed limit. The motor drive system of Klimo is described as being particularly applicable for use in conjunction with a hoist or a crane motor drive control system (col. 1, lines 1-8). Thus, instead of relating to a calculating driving torque of a generator at a speed which is always changed by an engine, Klimo merely relates to a calculating motor torque for a reversible drive motor. Thus, Klimo fails to disclose the features alleged in the Office Action.

Furthermore, there is no suggestion or motivation to make the combination as alleged in the Office Action. To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion and motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference or references must teach or suggest all the claim limitations.

The teaching or suggestion to make the claim combination and the reasonable expectation of success must both be found in the prior art, and not based on Applicant's disclosure (see MPEP §2143). In making an assessment of the differences between the prior

art and the claimed subject matter, §103 specifically requires consideration of the claimed invention "as a whole." The "as a whole" instruction in 35 U.S.C. §103 prevents evaluation of the invention on a part-by-part basis. Without this important requirement, an obviousness assessment might break an invention into its component parts, then find a prior art reference corresponding to each component. This line of reasoning would import hindsight into the obviousness determination by using the invention as a roadmap to find its prior art components. (*Ruiz v. A.B. Chance Co.*, 357 F.3d 1270, 1275, (Fed. Cir. 2004)).

By combining the Klimo reference which does not relate to or disclose calculating drive torque of a generator, the Office Action fails to consider the Klimo reference as a whole but merely seeks to find a reference that may provide a component admitted as being deficient. Thus, the combination of Klimo is improper as it merely imports hindsight into the line of reasoning and fails to provide proper motivation or suggestion to make such a combination. Additionally, there would be no expectation of success in such a combination because it would be impossible to calculate driving torque of a generator at a speed, which is always changed by an engine, using the equations provided in Klimo. Finally, as discussed above, as Klimo fails to overcome the admitted deficiency, the Office Action has failed to provide a *prima facie* case of obviousness. Accordingly, withdrawal of the rejection of claim 1 under 35 U.S.C. §103(a) is respectfully requested.

Claim 3 is rejected under 35 U.S.C. §103(a) as unpatentable over Tanaka, Sugimoto and Klimo and further in view of U.S. Patent 4,754,212 to Mashino; and claim 6 is rejected under 35 U.S.C. §103(a) as unpatentable over Tanaka, Sugimoto and Klimo and further in view of U.S. Patent 6,456,048 to Taniguchi et al. (Taniguchi). The rejections are respectfully traversed.

As none of the applied references, whether considered alone or in combination, disclose or suggest each and every feature recited in rejected claims 3 or 6, withdrawal of the

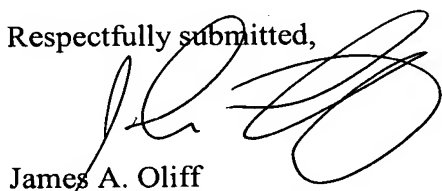
rejection of the claims is respectfully requested. Furthermore, claims 3 and 6 are allowable for their dependency on independent claim 1 for the reasons discussed above, as well as for the additional features recited therein.

IV. Conclusion

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1-11 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,


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